

California GARDEN

SINCE 1909
GREETINGS FOR
DECEMBER, 1965
JANUARY, 1966
VOL. 56 NO. 6



THE POINSETTIA STORY
EDIBLE WILD PLANTS
LIVING WITH ROSES — OLD AND NEW
TOYON — CHRISTMAS BERRY
SOME BIBLE PLANTS IN SAN DIEGO

35 CENTS



FLORAL EVENTS

December-January, 1965-1966

SAN DIEGO FLORAL ASSOCIATION PROGRAMS

Third Tuesday, 8 p.m. Floral Building, Balboa Park

Chairman — Mrs. Edward Penprase

No December meeting of the Floral Association will be held. Instead, make up a party of friends and go on the Christmas Lights Tour. Tuesday, December 21. Loading time 6:30 p.m., Sixth and Laurel. San Diego Trust & Savings Parking Lot. Tickets \$1.50.

Regular Meeting, January 18, 8 p.m.

Outstanding program by Jane Minshall on
"South Africa, Land of Colorful Contrasts."

More varieties of wild flowers grow in Cape Province, South Africa than in any other part of the world, and many of these are our garden flowers. Miss Minshall plans to emphasize the wonderful wild flowers of the country. She will also include slides of the wild animals, picturesque natives and modern cities. Sounds wonderful, let's all come out for it.

FLOWER ARRANGEMENT CLASSES AT THE FLORAL BUILDING, BALBOA PARK

For information, call Mrs. Roland Hoyt, Chairman, 296-2757

1. **Creative Arts Group** 10 a.m. - 2 p.m. Second and Fourth Wednesdays. There will be no meeting on December 22, because of the busy holiday season.
2. **Flower Arrangement Demonstration Class**, 9:30 a.m.
Monday, December 20. This is an earlier date because of the holiday season.

Instructor: Mrs. J. R. Kirkpatrick.

FLOWER SHOWS

DECEMBER

- | | | |
|-----------|---|---|
| 4-5 | CHRISTMAS STANDARD FLOWER SHOW, ANNUAL
Theme "Christmas Enchantment" | LA MESA GARDEN SECTION
L.M. Woman's Club House
5220 Wilson Ave., La Mesa |
| 4-5 | FALL CAMELLIA SHOW | L.A. STATE & COUNTY ARBORETUM
301 N. Baldwin, Arcadia |
| 8 | HOLIDAY CREATIONS | RECREATION CENTER
420 S. Washington Ave., Whittier |
| 12-8 p.m. | | Year Round Garden Club of Whittier |
| 10 | "SNOW FANTASY" | CHEVY CHASE ESTATES GARDEN CLUB
1770 Golf Club Drive, Glendale |
| 11 | ARRANGEMENT SHOW AND TEA, 21st Annual | FIESTA HALL, PLUMMER PARK
7377 Santa Monica Blvd.
Los Angeles Garden Club |
| 19 | CHRISTMAS POSADO | L.A. STATE & COUNTY ARBORETUM
301 N. Baldwin, Arcadia |

JANUARY

- | | | |
|-------|--|---------------------------------|
| 11-12 | "CALIFORNIA BEAUTIFUL" GOVERNOR'S CONFERENCE | AMBASSADOR HOTEL
Los Angeles |
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Among Our Contributors

James A. Kirk is a rose grower for the Men's Garden Club of America. He and his wife were the Sweepstakes winners with top score in all categories and top award for a floribunda spray at the Rose Hills Thanksgiving Rose Show in Whittier.

Frank F. Gander is known widely for his interest in California native plants grown in his Lakeside Nursery and in his Kissing Rock planting of natives and arid plants near Escondido. His new grevillea cross is drawing the attention of nurserymen and landscapers for its prostrate growth.

Mrs. Cleovis Hardin became attracted to bromeliads when she first saw them in Los Angeles and has been growing them ever since. She was born and lived in Florida where her parents were in the nursery business.

Raymond M. Hanna and his wife are co-owners of Exotica Nursery in Solana Beach which is noted for its wide variety of house plants.

AN ADDITION TO TORREY PINES RESERVE

The SDEA has been associated with the Torrey Pines Reserve since its inception. A move to add 260 acres north of the present site needs the urgent support of all who are concerned with conservation.

These privately owned hillsides, developed for residential purposes, would necessitate the leveling of the land and consequent removal of an extensive natural stand of rare Torrey pines.

The park commissioners meet Dec. 9 to consider 90 other park and beach projects for the use of state park bond money. This is the only issue on the preservation of a natural resource. Once lost it can never be regained.

Those interested in acquiring this unique reserve should write at once to Alfred J. Stern, Chrm. State Park Commission, Div. of Beach and Parks Offices, Sacramento.

December, 1965 - January, 1966

Vol. 56

No. 6

THE COVER

Cover design, by Alice Clark, of the poinsettia Gloria which Paul Ecke, Sr. thinks would be a good decorative variety in Southern California.

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It's Christmas at Bennett's

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California Beautiful Conference called by Gov. Brown at the Ambassador Hotel Los Angeles on January 11, 12, initiates a total state effort to preserve and recreate our heritage of natural beauty, and to provide a program of action now to accomplish those ends.

U.S. PRESIDENT GROWS CHRISTMAS TREES

Before he moved into the White House, one of our presidents was a Christmas tree farmer. In 1926, on the rolling acres at Hyde Park, Franklin D. Roosevelt, who became paralyzed in 1921, started a huge Christmas tree planting of balsam fir seedlings.

The trees flourished and became a financial success from 1935 on, with the marketing of over 50,000 cut trees by 1948, under the guidance of his son Elliott.

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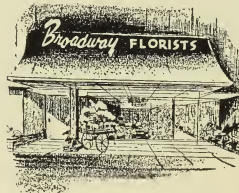
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D. M. Landon

Drawing by Dorothy Landon

**CHRISTMAS TREES
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This is not a pipe dream but the result of a long period of hybridization at the Pacific Southwest Forest Experimental Station at Placerville, California. This cross between a Sierra Nevada lodge-pole pine and the shore pine develops a full many-branched tree with a conical shape and straight trunk. It has thick dark green foliage with cones already decorating its tips in just the right places, at the marketable size of 6 feet. This can be attained in four to six years. The genetists have made the cross in both directions which means that it can be produced in quantity easily. Quantity breeding began in 1963 and in 1967 the young trees will be in quantity production.



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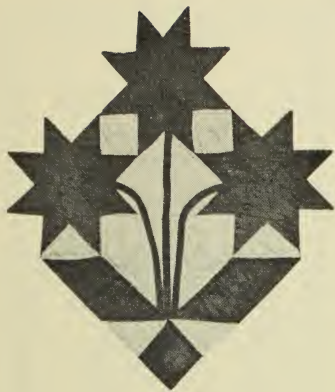
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THE POINSETTIA STORY

by Betty Mackintosh

A cotton quilt of red and green blocks stitched by my grandmother in Iowa, about 1880, may have formed my first impression of a poinsettia.

Photos by the Author

OUR first botanical records of the poinsettia were made less than one hundred and fifty years ago. Since that time, with the considerable assistance of horticulturists, the poinsettia has made the transition from a quiet life on the warm moist hillsides of southwestern Mexico, to the floral spotlight at Christmas in all the northern hemisphere.

From the very beginning it seemed to be a flower with a destiny. Its colors, long before the birth of Christ, had become symbolic: red for warmth, light, friendliness and life itself; green for the continuance or renewal of life. Primitive people associated these colors with their celebration of the return of the sun after the winter solstice. It was at this time of the year, the shortest days, that the natives of Mexico found the poinsettia blossoming in the tropical deciduous-forest areas.

When the Spaniards arrived they found extensive gardens for food, medical, and ornamental plants, and even a systematic nomenclature had already been established. The poinsettia's name in Nahuatl (Aztec) was *Cuitla-xochitl*, the last part meaning flowering plant. Phil Clark in *A Guide to Mexican Flora*, translates the whole word as "flower that fades."

The early Spaniards called all flowers Rosas, but the Christianized people of

Mexico gave the poinsettia the name *Flor de Nochebuena* or Flower of Christmas Eve, and use it traditionally in the Nativity celebration. Other Spanish names are seasonal or descriptive: *Flores de Pascua* (3-day or longer fiesta of the Church), *Rosa del Pastor* (Shepherd), *Flor de Fuego* (fire), *Hojas* (leaves) of *Fuego*.

Joseph Henry Jackson's booklet, "The Christmas Flower," tells the story of the discouraged padre who never fully succeeded in converting his Indian flock until the offering of roadside leaves by the poorest little boy was miraculously turned into brilliant red stars.

Another legend, by Lucian M. Lewis in Vol. III of "Poinsettias," a San Diego periodical edited by Grace Conroe, credits the poinsettia's origin to the Aztec maid:

"From whose broken heart fell drops of blood,
Showering earth with tiny crimson flood.
Straightaway those scarlet drops rooted and grew
Into a flower such as man never knew."

Helen O'Gorman, in "Mexican Flowering Trees and Plants," and Paul C. Standley, "Ancient Mexican Gardens," describe the Indians as having other than decorative uses for the poinsettia. From the red bracts a dye was made and also an extract to increase the

milk production (psychological?) of nursing mothers. The leaves served as a poultice for erysipelas and skin infections; the milky juice as a depilatory. Mrs. O'Gorman describes this flower as being much cultivated in southern Mexico for formal plantings and in the smallest Indian gardens, singly and in hedgerows to the height of 20 feet. In the blossoming season huge scarlet bunches of cut poinsettias are brought to the early market by the natives.

This may have been what impressed Dr. Joel R. Poinsett when he went to Mexico as the first U. S. Minister in 1825. He foresaw that, if the poinsettia could be made to grow outside of its native habitat, it would become a universal symbol of Christmas.

Dr. Poinsett was a statesman—Congressman, presidential envoy, Mexican Ambassador, and later Secretary of War. Born of a French Huguenot family in Charleston, S.C., he was educated in Connecticut, England and Scotland in medicine, military science, and law. He was interested in horticulture and had greenhouses of his own, to which he sent the red Mexican flower. He sent it also to a botanist named Buist, in Philadelphia, who believed it to be a new species of *Euphorbia*, and named it *E. Poinsettiana* (publ. 1828). In the next few years Dr. Poinsett grew it,

distributed it to his friends and publicized it. Then in 1834 Otto and Dietrich, cataloging the herbarium of the German botanist Karl Willdenow (who died in 1812) found the same plant. Whether Willdenow had named it or whether it was named at this time is not clear, but Willdenow was recognized as the earlier discoverer and the name *Euphorbia pulcherrima* Willdenow (the most beautiful *Euphorbia*) superseded *E. Poinsettiana* Buist. But the flower had already become known as the poinsettia, so in common parlance, poinsettia it remained; and who knows, the botanists may still come back to that name. Robert L. Dressler at the Missouri Botanical Garden has found it to have a different chromosome structure than the rest of the genus *Euphorbia*. He believes it should be a separate genus of the family Euphorbiaceae, and calls it *Poinsettia pulcherrima* (MBG Annals, V. 48 pp 320-40). It has fulfilled Dr. Poinsett's dream in spite of the fact that it has remained sensitive to cold.

The difficulty of meeting the commercial demand for the poinsettia as a Christmas flower has led to much research on hothouse growing and continual vigilance for improved varieties for cut flowers, and potted plants, and with garden varieties being an incidental result.

About 1909 Albert Ecke and his son Hans started growing poinsettias commercially in Hollywood from cuttings of varieties True Red and Early Red they had obtained from a neighbor's flower garden. In 1919, after the death of his father and older brother, Paul Ecke took over. After a few years he moved some of his fields of poinsettia stock to Encinitas and later his home ranch to that location. Another early commercial grower in San Diego County was Frank S. Sessions (Kate's brother). It was not, however, until 1927, when the Ecke Poinsettia Ranch initiated annual shipments of dormant root stock to growers by carload lots, that the economic status of the poinsettia became really practical throughout the Northern Hemisphere.

From one California-grown rooted stock cutting, as many as 150 blossoming plants can be produced between Easter and Christmas, doing away with the expensive carry-over of stock plants, which in a cold climate requires a lot of space and heat even while dormant. The U. S. Department of Agriculture Census for 1959 reports that there were 6,819,159 potted poinsettia plants sold in that year, nearly twice as many as 1949. The wholesale unit value was \$1.31, a 3 per cent increase in ten years

compared with a general U.S. wholesale price increase of 18.7 per cent.

And so it is because of practical men, like the Ecke family, now in the third generation (with Paul Ecke Jr.) in the poinsettia business, that the flower reaches millions of people for Christmas. At the present time, the Ecke ranch has between four and five hundred acres in fields of poinsettias at Encinitas, Carlsbad and San Onofre, a thrilling sight from Thanksgiving to the middle of January.

Of their many hothouses, the most important are those devoted to hybridizing and experimentation. Here the best plants are hand pollinated for the

improvement of particular characteristics. A thousand seedlings at a time are grown and tested, always aiming for better quality, appearance and growing economy. They now have a gorgeous full flower with bracts nearly six inches wide, pinker pinks, whiter whites, a variegated green and white leaf with a red flower. Plants have sturdier stalks which do not require the labor of staking, improved root systems, greater retention of leaves and "petals" (two months for a potted plant in an average home). Ecke research is even adapting this tropical flower to slightly cooler atmosphere.



Harvesting poinsettias at the Paul Ecke Ranch in Encinitas. Bundles of cut poinsettias are placed in rows to await transportation in five-gallon cans of water, to the packing sheds where the stems are "cooked."

Some Bible Plants To be found in the San Diego Area

by Chauncy I. Jerabek
The San Diego Tree Man



Photo by Mackintosh

Bulrush, *Cyperus papyrus*. Note the three-cornered stems from which the Egyptians made their paper.

FEW people today realize that the same plants that existed in Bible times can be found growing in our own immediate area. I should like to mention a few outstanding ones.

Cedar of Lebanon

Cedrus libani, which lived hundreds of years before the birth of Christ, is full of sacred interest. It was often referred to in the Bible and described by many writers from 1550 down to the present time. King Solomon used its fragrant, long-lasting wood to build his temple and palace. I Kings 6:36, 7:2, 5:8, 10:27, Ps. 29:5, 92:12, Isa. 2:13. Today, of the original majestic forest of Mount Lebanon, there is only a remnant of about 400 cedars left.

This cedar is an evergreen tree with horizontal spreading branches clothed in short dark to bright green needles less than an inch long. The cones which take 3 years to mature are 3 to 4 inches long. The leading shoot may be upright but is often spreading. When young the growth and foliage of the Lebanon, Atlas and Deodar cedars is vastly different but, with age, the growth and even the cones resemble each other.

The Lebanon cedar may reach 120 feet in height. It is much sought for its handsome, fragrant wood, which has almost no knots and does not decay.

Cypress Tree

A conifer mentioned in Noah's ark is *Cupressus sempervirens*, a native of southern Europe and western Asia. Gen. 6:14, Isa. 44:14, Ec. 50:10. This cypress has thick foliage with blunt scale-like leaves of a rich dark green color, and sub-globose cones on short stems. Known in this country mainly as an ornamental; even in olden times it was famous as the most durable timber in southern Europe. Ancient Greeks carved statues of their gods out of this wood. Plato directed that their laws be engraved on tablets of cypress. Temple doors of this material sometimes lasted 1000 years. A tree found in the Alps was 121 feet high and 23 feet around the trunk. Those we grow would be mere saplings compared to cypress in its native habitat.

Jerusalem Pine

Pinus halepensis was indigenous to the Mediterranean basin from Portugal

to Palestine. Most authorities agree that this pine, also called the Aleppo, is the one referred to in some Biblical passages as fir. No temple of ancient Greece was complete without a setting of this tree around it. Isa. 60:13, 41:19. It was also generally used for building purposes in the Holy Land.

When young, the Aleppo is a fast-growing bush-like tree with flexuous stems that zigzag in every direction. After 20 or more years it slows down, the lower branches drop off and the top becomes flatter and more depressed. The bark is a smooth silvery gray. The slender light green needles are usually in twos, from $2\frac{1}{2}$ to $3\frac{1}{2}$ inches long. The polished red-brown egg-shaped cones, 4 to 5 inches long, turn gray when they open. Though a lofty tree in its native habitat, those in our area generally grow about 30 to 40 feet in the same number of years.

Myrtle

Myrtus communis is native to the hills around Jerusalem. It is a densely foliated shrub, 10 to 15 feet high, with small lustrous dark green ovate-lanceolate leaves dotted with oil glands

that are fragrant when crushed. Pure white flowers, $\frac{3}{4}$ inch wide, have brush-like stamens followed by subglobose $\frac{1}{2}$ inch purple-black berries.

The Greek name for Myrtle means perfume. Its sweetness and fresh green beauty made it popular for decorating festive booths so that it became an emblem of peace, justice and immortality. Even in modern days in some countries it is used in bridal bouquets to bring good luck. Myrtle is a source of perfume and of an oil for tanning leather. Zec. 1:8, Neh. 8:15, Isa. 55:13.

Laurel or Sweet-bay Tree

Laurus nobilis was originally around the East Mediterranean basin, today it is found in the hills of northern Palestine, Mount Carmel and the small valleys near Galilee where it grows 40 to 50 feet tall. These Bay trees are also found in Greek forests and in cloister gardens. The young trees when grown naturally have multiple trunks with perfectly round heads. The evergreen dark oblong leaves have an aromatic odor. The female trees produce purple-black berries which are crushed to obtain an oil for perfume. They belong to the same family as our Sassafras and Cinnamon. The dried leaves are used for seasoning foods.

The Roman emperors wore laurel leaves to indicate nobility and chaplets were used to crown the victors in Olympic games. Bay wreaths were also given to people of learning, from which practice comes our word "baccalaureate." As an evergreen, the tree came to stand for prosperity and for protection against misfortune. Ps. 37:35.

Almond Tree

From the eastern Mediterranean to Central Asia the *Amygdalus* or *Prunus communis* was found. Almond, the Hebrew word meaning to wake or watch, was given to this tree because it is the first to bloom or awaken from the long sleep of winter. The thought of life after death is also associated with it. Gen. 43:11, Ex. 25:33, 34, 37:19, 20, Eccle. 12:5, Jer. 1:11.

The almond is 15 to 25 feet high with rather erect young branches becoming round-headed when older. Leaves, 3 to 6 inches, are ovate-lanceolate. The pink or nearly-white flowers appear before the leaves, singly or in pairs. A velvety succulent covering encloses the hard shell with its nut kernel. Blossom, fruit and form resemble the peach tree. In northern California the almond is grown commercially for its nuts. In our area it is only seen as an occasional ornamental. Normally I do not regard it as a long-lived tree but

one was mentioned in the quarterly journal "Trees in South Africa," as being 10 feet in circumference, with a spread of 30 feet. It is claimed that the missionary, David Livingstone, proposed to Mary Moffat, later his wife, under this same almond tree in Kumanan.

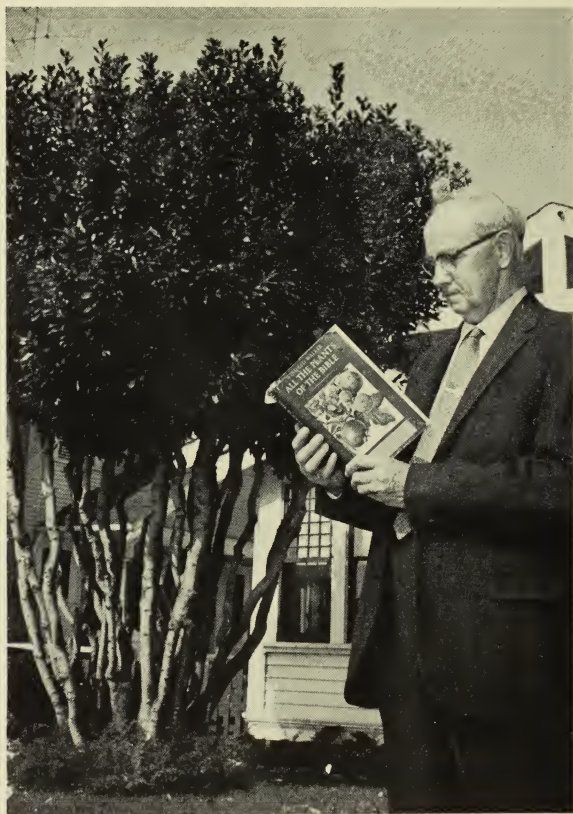
A fine local specimen with a spiral trunk may be seen near Fortuna on the west side of Riviera Drive, in Crown Point.

St. John's Bread or Locust Tree

From the eastern shores of the Mediterranean Sea comes *Ceratonia siliqua*, a handsome evergreen, compact tree, with dark glossy green leathery compound leaves. The red and yellow flowers are not showy as they have

no petals and grow close in on the branches. Polygamous trees bear flowers of both sexes but some are only female. The fertile flowers develop into thick, tough flat pods, 4 to 10 inches long, nearly an inch wide. When fully ripe, they are a dark brown color, filled with a sweet pulpy substance imbedded with flat uniform bony seeds. These sugar-rich pods have long been used for fattening animals and are also eaten by humans. A chocolate substitute made from them is sold in our health stores.

It is supposed that these seed pods were the locusts eaten by St. John in the wilderness, Mat. 3:4, and also the husks consumed by the Prodigal Son when feeding the swine, Luke 15:16.



San Diego Union-Tribune Staff Photo

Laurus nobilis, Laurel or Bay tree at 2040 Dale Street. This much-photographed specimen beside Mr. Jerabek is a special favorite of his because of its round top and multiple trunks.

Date Palm

Phoenix dactylifera, the true Date Palm, originated in Arabia, Persia, Upper Egypt and nearby countries. When young, the trees are surrounded by a mass of suckers which are lost as they grow older. Eventually the tree forms a straight slender trunk, 100 or more feet high, pointing towards Heaven. The crown is a head of rigid gray-green sharp-pointed leaves 20 feet or more long. The flowers are white and fragrant followed by oblong-ovoid fruit of deep orange color that turns brown when mature. Where these palms grow, many families subsist almost entirely on the vast quantities of dates that they gather each year. The trunks are used for posts and roof beams, the leaves for thatching, the foliage for needles, thread, hats, mats and baskets. Wine and sugar are also derived from palms. A branch or leaf was borne by the ancients as a symbol of victory and rejoicing. References: Rev. 7:9, Num.

33:9, Ps. 92:12, John 12:13, Judges 4:5.

The old Arabs used to say: "The Date Palms delight to have their toes in the water and their heads in the oven." The finest palm trees of the Biblical age were around Jericho and along the banks of the Jordan. For years all dates came from West Asia or North Africa. Today the finest and sweetest are grown in Coachella Valley and marketed from Thermal and Indio. There are a few scattered date palms in our county but the climate is too cool for the fruit to reach maturity, even if hand pollinated.

Olive Trees

Perhaps among the most revered trees of ancient times were the olive trees in the Garden of Gethsemane near Jerusalem where, according to Mat. 26:39, the Lord Jesus communed with God. Other references are Gen. 8:11 and Ex. 27:20.

Olea europaea grows to 25 feet. Of variable habit, the trunks become gnarled with age. The leaves are simple, opposite, dull gray-green above and silvery tomentose beneath. Pale yellow flowers are followed by shiny purple-black fruits that are edible when cured. Valuable oil is extracted from the flesh and seed.

Many new subdivisions use olives as accent trees; other places, such as Rancho Bernardo, line the streets with them. In older residential sections many interesting and picturesque specimens can be found. The majority of these trees are seedlings. Those that produce the large fruits from which most of our canned olives and olive oil are obtained are from stock grafted with scions from cultivated species specially developed through the years.

Edible Fig

Ficus carica is the botanical name of the first fruit to be recorded in the Bible in Gen. 3:7. The fig is also mentioned in I Kings 4:25, I Sam. 25:18, Prov. 27:18.

The edible fig, a deciduous tree, is sometimes trained to a single trunk or it has multiple stems and procumbent branches. In season it is covered with large ovate 3 to 5 lobed leaves, heart-shaped at the base, with a very rough upper surface. The flowers, never conspicuous, are produced inside a pear-shaped receptacle which enlarges to become the fruit. In some parts of the state they are an asset to the economy, where they are grown for the fresh or dried fruit market or for jam and preserves.

Paper Reed

Cyperus papyrus, also called Bulrush, is native to Northern Africa and Palestine. It grows to a height of 15 feet, with a three-cornered stalk 2 or 3 inches in diameter, topped by a brush umbel of drooping thread-like leaves. In ancient days its stems almost completely hid the swamps and rivers, forming an impassable jungle. This plant was used to make small floating rafts, mats and paper. Beginning in 750 B.C. the Egyptians made parchment by stripping off the green bark of the reeds, placing slices of the pith side by side and saturating them with gummy water. Joined under heavy pressure, they became the dried product upon which were written many priceless manuscripts of sacred and classic literature preserved to this day. Ex. 2:3, 5, Isa. 18:2, 19:7, 58:5. This graceful and attractive foliage plant is often grown in San Diego.



Photo by Mackintosh

Cedar of Lebanon at 4575 Alice Street, near Madison. The few cones on this tree stand upright like those of the Deodar. Needles and branching habits are similar but much thicker.

ROLAND HOYT*

RECOMMENDS

TOYON —

TOYON berries are native to the coastal sections of California and south into lower California. This shrub, long standing in cultivation, is now infrequently seen in nurseries. This situation is unfortunate since the toyon is not only one of the more handsome and serviceable species, but also one of the natives better adapted to garden or landscape.

A new look then at *Heteromeles arbutifolia* (Photinia) which is also known as Christmas-berry and California holly is surely in order and herewith presented. It begins as a substantial, somewhat leggy shrub with dark, shining foliage and an unusually generous crop of red berries. It ends up as a spreading, round-headed tree of some 25 feet at its best. This latter happens only when the plant is well situated for soil condition and depth, exposure and proper moisture for timing and amount. The lower trunk can be as much as 15"-18" through.

The "situation" as termed above means essentially a north slope, preferably under cooling breezes, the soil well drained and deep. It can be grown otherwise, but will stunt, fail to produce fruit, or simply deteriorate and ultimately dry up in too much heat. In nature, both environments and conditions above will be noted and the planter will follow the first or face failure, as marked off in the last. Don't over-water and don't push with over-feeding, when a glorious plant may result for the winter landscape, and good cuttings served up for Christmas time.

Many diseases may come about unless proper conditions for growth are available and sensible restraint in management observed. Where these stipulations cannot be provided, the plant should not be considered, and a substitute sought out. Butterfield, of the University of California, has called attention to two serious diseases that will be found more or less commonly. The one, known as scab is a fungus infection, dark splotches such as seen on apples and the foliage, or on rose leaves. This will be encouraged when



Drawings by Alfred Hottes

vigor in growth is depleted. The other, the common fire-blight appears when the growth is too great and attacks succulent new twigs first. This is bacterial in nature and there is no cure beyond cutting out infected parts to stop the spread. The old bordeaux mixture can be used as a spray for scab or any of the newer contact fungicides will control it. This should be placed in the summer. The plant is also subject to the ordinary scales, the oyster scale northerly, the brown scales in the south. A miscible or wettable spray will be used here. Thrips anywhere will disfigure the leaf, especially when the plant is over the tolerance line in heat. A strong contact such as malathion must be used here if effective control is to be achieved.

Start in early spring and continue from time to time. A sooty-mould fungus may be noted after a serious going over by aphids or other sucking insect.

This is an impressive enumeration of ailments, but one need not be discouraged and driven off. Just be sure of your ground in location and your self-discipline in management. Here is a prime example of the value of knowing where to place a plant, so that satisfaction is assured over long years. And here, there will be a yearly harvest for Christmas decoration . . . and for the birds. Don't begrudge their share, but try to get there first.

*Fellow ASLA, author of *Ornamental Plants for Subtropical Regions*.



Photo by Germain

American Heritage is a golden-orange rose that changes colors.

Living with Roses

ROSE CULTURE AND NEW SELECTIONS

by James A. Kirk

NOW is the time of year to plan next year's rose garden, to weed out old bushes and to buy new plants that will give you greater satisfaction. Actually this is the only time of year when roses are available from the grower at their bare root or dormant stage, and at a cheaper price. Packaged roses are available at just about every store, including many drug stores.

Like the framing of a house, the work done in the rose garden in the December-January period is most noticeable. The oldest canes are pruned out, leaving the new last year's growth. The old diseased leaves are picked off and all rubbish is raked up and removed. New mulch is spread around every bush, leaving a neat garden—a place to be proud of.

Roses should be cared for all the year

round, not only this one time of year. As you cut the flowers for the table, the bush will be pruned to shape in the way you desire. Cut to the leaf pointing the direction the plant is to grow. As the bush blooms, so should it be fed. If fed at the first blooming period, and every month during the growing season, you will have blooms every six weeks from the middle of April until Christmas.

Roses are like children—not one is like the other—and like children, you have to live with them in order to really understand them, and reap the greatest benefits from the garden. Many roses desire more food than others, for example Charlotte Armstrong and Peace and several others, should be fed twice as much as other rose plants, but Kordes Perfecta should be fed one-half the amount given most roses at a regular feeding. But regardless of how

they are treated, they will grow and bloom to make a better place for us to live.

A rose bush will never wear out—at least I have never heard of one that did if cared for correctly. There is a plant in Germany that is over 150 years old and still growing and blooming. And don't forget the Lady Banksia rose in Tombstone, Arizona, that was brought there in a covered wagon—way back when. As you prune, the old canes are removed and new ones are encouraged to take their place, and in this way you will have a new bush every three years.

There are many new roses on the market today and with such stiff competition among growers and hybridizers, it will be hard to find a rose that won't do well here in San Diego County. Like a cup of coffee, they are all good—some are just better than others.

The roses that have been chosen as A.A.R.S. (All American Rose Selection) winners have been tested all over the United States for some years as to growing habits, vigor, disease resistance, floriferousness and fragrance. When you buy one of these, you are pretty sure of getting just what you want in a healthy rose plant.

Matterhorn is one of the best whites that has been introduced in many a year, but like its parent **Buccaneer**, it tends to grow tall with a slight tendency towards mildew. But all through the growing season you can be sure of blooms for picking.

American Heritage will be a show in the garden and likewise a good rose on the Rose Show table. It is one well worth watching as it develops to a full-blown bloom of gold and orange and it is surprising as it fades and changes colors.

Jamaica is a new rose from Howards of Hemet, and up there it is known as "Big Red." That is the way it shows up in the growing fields, overlooking all the rest. When you plant this one, be sure that it is in the back of the garden, so the others can be seen.

One of the best Floribundas I have seen this year is **Palm Springs** from Elmer Roses. The gold, pink and rose bud opens into a flower of almost 50 petals, making a perfect flower for arrangements, and it is a long-laster.

If you haven't picked up last year's All-American Rose Selections **Mr. Lincoln** and **Camelot**, you have been doing without many wonderful roses for a whole year. Get them in the ground right away. And don't forget **Oklahoma**. You won't regret it—as a dark red, it is hard to beat, with better blooms and less disease than many others. **Columbus Queen** is one of the best on the Trophy tables in the spring. It will bloom in abundance all the rest of the year, but if the weather gets hot, it will bloom out very fast. **Summer Sunshine** is one of the best yellows available for this area, but don't throw rocks at **King's Ransome**. It is still holding its own. **Fragrance** doesn't quite live up to its name, but for many perfect dark pink roses, you will be well satisfied. **San Francisco** and **Olé** are a couple of orange-red roses that came out a few years ago. They will seldom show up on the Trophy table, but for a show in the garden and for picking to bring into the house, they are well

worth having. **San Francisco** will last for a week or more as a cut rose, and **Olé** makes a wonderful arrangement flower.

We can't forget **Granada** with its blend of scarlet, nasturtium red and lemon yellow. If you have seen this rose on the bush or as a single bloom, the sight would surpass anything I might be able to say for or about it. It is one rose that will always speak for itself. I could go on and on talking about the new roses. There are thousands of roses on the markets today—at least one for every purpose—and more coming from the seed flats every year, getting better all the time.

Don't accept second grade plants. Buy the best available. The return for

your investment will be much greater from Grade 1 plants. Just remember that a Grade 2 rose eats as much food and takes as much water for only one-third of the blooms in return. Whether in cartons or moist shavings, among bare-root roses, Grade 1 plants will usually have 3 strong canes of about 18 inches; Grade 2 will have one strong cane and may have 2 weaker canes of about 10 inches. Polyanthas Grade 1 usually have 4 canes 10 inches long. Grade 2 has 2 canes of 6 inches or longer.

The American Rose Society has appointed many Consulting Rosarians in this area who can help you with your rose problems. You can find one close to you by getting in touch with the San Diego Rose Society.

"Matterhorn" one of the best new free-blooming white roses.



Photo by Armstrong Nurseries

EDIBLE WILD PLANTS

by Lovisa C. Wagoner

Drawings by Roland S. Hoyt

LEST the harmful qualities of plants seem unduly stressed in my previous article*, mention should be made of uncultivated plants that are good to eat. Now that so many families spend vacations in National forests and parks and in wilderness areas, it is important to be able to recognize harmful plants growing not only in the home locality but also in the area visited. In addition, appreciation of edible plants in the wild adds interest even if the plants are never needed for food. Contemporary use of native plants as garden subjects and concern for conservation of plants found in the wild may increase the need for caution but will also make edible plants of added interest. Some of these are the ancestors of those we cultivate, as strawberries and blackberries; some escaped from gardens or were inadvertently introduced. Plants introduced by early settlers also naturalized themselves and now grow wild along roadsides, in uncultivated places and as weeds in our gardens (for example the dandelion *Taraxacum officinale*). Indeed the history of the settlement of the United States could be written in terms of plants intro-

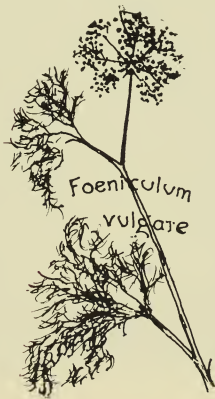
duced from abroad. Caravan routes of ancient, medieval and modern travels show the geographical origin of the garden vegetables, cereals and nuts that make up our everyday diet. The United States Department of Agriculture has sent plant explorers all over the world to search for and bring back plants both wild and cultivated to add to our food resources. Settlers learned to recognize native edible plants and how to use them, from the Indians.

Handbooks for the use of vacationers and other travelers in wilderness areas and the Survival Manuals prepared for the Armed Forces, describe plants growing wild that are both safe to eat and nutritious. These publications draw upon ethnobotany and also the culinary practices of people who have lived long in a particular area. Children may have their early lessons in ethnobotany and also in the history of exploration through learning to recognize edible plants, knowing what part is edible, and how to prepare it if scrupulous washing or cooking is necessary. Through experience, residents

and explorers have learned what to use, what to avoid.

Ethnobotany, one of the more recently developed intermediate fields of science, as the name indicates, draws upon ethnography and upon botany. The anthropologist and the botanist join forces either through expertness in two fields or through collaboration. In the United States, ethnobotany is largely concerned with the use made by the Indian tribes, of native flora as food or as medicine, and for clothing. Even middle-aged Indian people now know of these things through their grandparents' tales rather than through use, while the younger Indians adopt the foods available commercially. Medicinal use persists more tenaciously but is more difficult to discover, for food uses are readily discussed. H. H. Smith (17) says it is easier to obtain information about food because these people are fond of food and like to talk about it. He goes on to say that plants are valued either for their nutritional

California Garden, Aug.-Sept., p. 12



properties or as seasoning that makes other plants more palatable (e.g. wild ginger). The familiar account of the first Thanksgiving illustrates the value of such knowledge to settlers.

According to Muenscher (14) p. VI and 167, "various wild plants are not only edible and well-stored with vitamins but most are near at hand. Several are common weeds." Always it must be remembered that it is important to know plants in their different stages of growth, for some are edible or poisonous depending upon maturity. The flavor of young plants is preferable to that of the mature; those gathered near flowering time are bitter and tough.

Another difficulty, as has been said, is inherent in the fact that one plant of a family or a certain part of a given plant may be edible, while others closely related, are harmful. Berton Rouché describes a sudden severe illness that occurred in a farm home immediately after eating fresh tomatoes, the first of the season to ripen. None of the usual causes of food poisoning were found. Finally one of the men remembered that the tomatoes served grew on a



plant that had been grafted onto a Jimson-weed *Datura stramonium* in order to develop "a hardy frost-resistant tomato that would ripen late in the fall." (16) p. 195. Both are Solanaceae, and for years a neighbor had been growing tomatoes on Jimson-weed grafts, but his technique differed in that he pruned the leaves of the latter in order to encourage growth of the tomato plant and fruit. The other farmer had allowed the weed to grow luxuriantly. The poisonous alkaloid, hyoscyamine, is synthesized in the leaves of a Jimson-weed, thereby greatly increasing the poisonous quality of the fruit, the tomatoes. The fruit of the May apple *Podophyllum peltatum* is good to eat but the root is poisonous. Taro *Colocasia esculenta* when prop-

erly prepared becomes the poi so important a food in the islands of the Pacific. Yet this root uncooked is poisonous. The young shoots forced and blanched are cooked as a vegetable.

A third problem, important to remember, is that the same common name is given to different plants. The Samphire, native to European seashores, is *Cribthum maritimum*, while the Samphire, Pickleweed, ranging from San Francisco to the Bay of Mexico, is *Salicornia puberterminalis*. The former belongs to the Umbelliferae. The latter is a Chenopodium (5) p.88.



Widespread along roadsides and in waste places is a perennial often called dill and also anise. Fennel *Foeniculum vulgare*, native in southern Europe and the Mediterranean region, now has escaped in New England and as far south as Louisiana. (14), p. 64-65. Flavor and odor resemble anise. This plant found its way to the Pacific slope where it often is known as sweet fennel. Indians used the seeds medicinally and also cooked the young shoots as a pot herb. (7) p. 48-49. This is not at all the same family as the unpleasant smelling Dog Fennel or Dogs' Chamomile *Anthemisis cotula* which also is widespread. Nor is it properly called anise which is *Pimpinella anisum*. Other names are Sweet Cumin and Sweet Alice.

The phrase "where lambs may safely graze" so long ago set to music by Bach, takes on a new meaning when one begins to look into this matter of edible plants. The various wild onions, distinguished by their common allium odor, are edible, as are fritillaria, erythronium, and mariposa lilybulbs. Medsger (13) p. 177-178 refers to the belief that in their early years in Utah, the Mormons ate quantities of Calochortus including the Mariposa lilies,



and adds that their use as food should be a last resort today for the flowers are so beautiful;—a statement equally true of fritillarias and erythroniums.

The native Miners' lettuce *Montia perfoliata* was very important in the diet of the '49ers and other miners, as the common name indicates. It was also eaten by the Indians both raw and cooked. Water cress *Nasturtium officinale* native in Europe, has naturalized itself in this country and also is cultivated as a salad plant. A source of danger not inherent in the plant itself is water pollution. It is safe to eat only when it grows in pure water. Because this cannot be easily determined, it is wise to leave even so pleasant an addition to a picnic meal untouched. Young shoots of nettles *Urtica*, skunk cabbage or yellow Arum *Lysichitum americanum*, Lamb's quarters *Chenopodium album*, Shepherd's purse *Capsella Bursa-pastoris*, Pokeweed *Phytolacca*, are examples of the potherbs. See also Lyon (10).

The fruit of the Prickly-Pear *Opuntia littoralis* provides both food and drink for men and for animals. The young fleshy joints of *O. polycantha* and *O. fragilis* are eaten roasted, boiled or fried. (6) p. 68. Other starchy root-





stocks that are eaten boiled or roasted are those of the Bitter-Root *Lewisia rediviva*, rhizomes of the Sword-Fern *Polystichum munium*, and the Lady-Fern *Athyrium filix-femina*, and of the Brake or Bracken Fern *Pteridium aquilinum*. The Deer Fern *Struthiopteris apiculata* was used by Indians only in emergency; the Quileute tell their children to eat the root if they are lost.

In animal feeding the toxic effect of bracken appears to have cumulative harmful effects when large amounts are eaten. Even though in Handbooks bracken is listed as edible, this point may well be kept in mind, for while human beings are not likely to eat it in quantity, the possibility of harm exists. The caution "in case of doubt it is better to avoid the plant concerned and to use those whose identity is unquestioned," would seem to apply also to any plant which has been found poisonous to animals. As with harmful plants the list of edible plants could be almost indefinitely extended. The beautiful book prepared by Margaret McKenney and Edith F. Johnson (12) describes and illustrates wild or native fruits which are good food for birds or animals but does not point out which one may be injurious to human beings. Just as the hazards of cultivated berries and fruits are increased by the residues of sprays, so the hazards of wayside fruits are increased by drifting sprays. Not only this, but their abundance is limited by the use of herbicides.

Since published statements about the use of plants for food, about harmful properties, about methods of preparation and other matters do not all agree, and since not all statements are clear to the non-technical reader, caution certainly is the better part of wisdom.

Edible sea plants

Today when interest in the ocean as a source not only of potable water but also of food is so great, mention of another form of plant life—seaweed—is important. All over the world, ex-

perimentation with phytoplankton goes on because every component necessary for life has been found in it. According to Guberlet (2) p. 150, Thailand is harvesting and processing 5,000 tons a year. Growth of the fresh-water or soil alga, *Chlorella*, can be controlled so that its content is high in fat or high in protein. (2) p. 144. The botanist places seaweed near the bottom of the evolutionary ladder, but essential to understanding the value of seaweeds as food, is appreciation of their capacity to synthesize the components of seawater.

Everyone knows the value of agar-agar not only in culture media but also in soups and other forms of food. *Gracilaria confervoides* is one of the seaweeds which yields agar. This grows in the water off North Carolina. The Japanese, however, have developed the industry to a much greater degree using *Abulfetia gigartinoides*.

Irish moss or Carrageen *Gigartina stackhousei*, is the most important edible seaweed in the United States. It is used for its thickening, jelling and stabilizing powers, in making cosmetics, pharmaceuticals and as a stabilizer in prepared foods. (2) pp. 114, 116. New uses are constantly being developed, yet for centuries it was used only to prevent scurvy and as a source of iodine and various minerals.

Dulse or red kale *Rhodomenia palmata* grows in many parts of the world and has long been used as food, relish and medicine. It is eaten raw or cooked. When Ireland suffered from famine, people along the coast added dulse to their potato diet (2) p. 122.

The value of kelp, for example the ribbon kelp *Nerocystis luteana* as a source of iodine is well known, but its use in dairy products and poultry feeds is also important. Gunther says (3) p. 50, that some tribes eat this kelp dried and flaked like chipped beef. More seaweed is used as food in the Orient, especially by the Japanese who use more than 20 species (2) pp. 54, 118. In Hawaii also, seaweed is important in the diet and approximately 70 species are used.

Many more species of algae could be cultivated as food and for their vitamin content, but the pollution of sea water limits the growth of algae and also destroys their edibility. Thus, any consideration of edible plants on land and sea involves also consideration of the safe use of pesticides, and the prevention of water pollution due to sewage, oil and industrial wastes.

Bibliography

Note: The handbooks are prepared for use in a limited area. Only Medsger's discussion (13) includes the whole United States. Unfortunately, the handbooks intended for general use do not always distinguish clearly enough to help the amateur recognize the plants that are harmful nor do they point out the part that is to be avoided, stages of growth when danger is present, quantity that might be safely eaten. To distinguish between safe and dangerous is not always easy. For example, the name Camas is used commonly for two distinct species. *Zigadenus venenosus* is poisonous to animals as well as human beings. *Camassia esculenta* (commonly called quamash, quamash, push) is very nutritious. Both bulb and young shoots of this form, and of *Camassia litchii* (4 p. 29-35) have been and continue to be important food. Because it is so very difficult for the amateur to distinguish between the edible and the poisonous, the same rule as for mushrooms and toadstools should be followed—neither should be eaten unless identified by the expert.



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(Please turn to Page 26)

A NATURALIST'S GARDEN

by Frank F. Gander

MY little pocket dictionary defines the word "garden" as "ground for growing plants," while in *The Standard Cyclopedia of Horticulture*, Dr. L. H. Bailey takes half a page to define the word and then cites some twenty-five subdivisions where more information is given. The word originally meant "an enclosed place," and many gardens are enclosed to give them a feeling of privacy and intimacy.

Bailey says that one's first garden should be a personal one for the growth and development of the gardener. I feel that every garden should thus contribute to the one who develops it. Not all will gain alike from gardening, but each one should acquire a feeling of closeness with nature from growing and working with plants.

To a naturalist, a garden is a bit of nature, perhaps condensed and otherwise modified from its original condition but still a place where plants and the animals associated with them can be observed and studied. To this end, he develops his garden in a natural and informal way and encourages lizards and rabbits and birds to make their homes there. Rocky slopes are very suitable for the development of such naturalistic gardens, and on two such slopes I have grown naturalistic gardens. One of these was at Lakeside and the other near Escondido, and both are largely still extant.

At Lakeside, I used only California native plants while near Escondido, I combined such Californians with drouth-tolerant plants from all over the world. Both gardens were very satisfying to me, and both certainly contributed to my own growth and development. A garden is a wonderful place to observe and in which to experiment, and it is also a place to relax and to meditate.

From observations which I have made in my gardens I have written many articles for nature magazines.

Some of these have appeared in *CALIFORNIA GARDEN*, in *Audubon Magazine*, and elsewhere. By thus sharing what I have learned, I increased the pleasure derived from my gardens.

Added pleasure also came to me from experiments I performed with the plants. I tested plants under different cultural methods and found that many will stand a surprising amount of drouth. Also I produced a number of hybrids between various plants, and one of these is now attaining some popularity in this region. This is a hybrid between two species of *Grevillea* from Australia, *G. obtusifolia* and *G. thelemanniana*. It grows prostrate like *G. obtusifolia* but has the feathery green foliage of *G. thelemanniana*. Growers say that it is hardier and easier to grow than either of its parents. (see photograph)

Such work is in itself relaxing, but there were many days when I had been working elsewhere and had reached home by driving through rush-hour traffic when I would seek out a bench in a secluded part of my garden and just sit there doing nothing. Of course I would be enjoying the fragrance of the flowers, watching the bees at their work, and listening to the singing of birds, but this is all relaxing. Such animal life is, to me, an intrinsic part of a garden, and I would not want a garden without these interesting creatures.

Many birds, some lizards, and a few mammals in the garden near Escondido became so tame that they would come and take food from my hands, and visitors always enjoyed watching them. More people should thus enjoy the animal life in their gardens for it is an experience that is becoming less and less available as the human population spreads rapidly over more and more of the earth.

Most of this earth of ours is still garden-like to a naturalist, although some large areas have been devastated.



Photo by Mackintosh

Grevillea Montezuma's Cloak, was named by Mr. Gander for the robe of green quetzal feathers interspersed with bits of red like the blooms.

I find I do not need an enclosed area that I have developed in order to observe and experiment, to relax and meditate. No longer enslaved by a job, I roam at will over a rocky mountainside where many California native plants are growing, and where there are other drouth-tolerant species from all over the world. These last we call "weeds," and it is frightening the way some of them are spreading. Some, like the Russian thistle, abound in California cities, are common in Grand Canyon National Park, and line every roadside in the Navajo country.

Such plant weeds and "weed" species of animals like the house sparrow, the common starling, the brown rat, the house mouse, and others show us what the world may be like in the future. When most native species of plants and animals will have been crowded out of existence by the ever-increasing human species, these "weeds" will continue to exist along with mankind in spite of all he can do to prevent it. Unless some drastic type of population control is started soon, first nationally, and then internationally, that is what the future holds for our earth.

A BOOK IN THE HAND

by Alice M. Greer

Creative Decorations With Dried Flowers; Dorothea Schnibben Thompson; Hearthside Press; 1965; 125 pages; \$6.95.

THE art of drying flowers is not new. As early as the 18th century, flowers were hung in attic or barn to dry, weeds were dipped in homemade dyes for a touch of color, or were buried in sand, borax or corn meal. Today the chemical, *silica gel*, is used for quick and effective preservation.

Dorothea Schnibben Thompson, a creative flower designer, introduced this process several years ago. Since then its use has swept the country and a new industry, preservation of plant material, has developed.

The author very simply and clearly gives the step-by-step procedure for using this inexpensive, non-poisonous, widely available chemical and shows how to use the results in many stunning and varied designs. Ten chapters cover her range: *The New Way of Preserving Plant Material*; *Notes on Flowers and Foliage*; *Interior Decorating With Natural Materials*; *Long-Lasting Table Decorations*; *Dried Decorations for Christmas and Other Occasions*; *Unique Articles To Wear*; *Here Comes the Bride*; *For Gifts and Bazaars*; *Dried Flower Arrangements*; *Antique Flowers*.

Simple illustrations, in color and black and white, plans, charts, index and directory make the book of value to craft workers, artisans and flower arrangers.

Tree Flowers of Forest, Park and Street; Walter E. Rogers; Dover Publications, N.Y.; 1965, paper bound, 499 pages, \$3.00.

DOVER has brought out an unabridged republication of a work first published in 1951 by the late Walter E. Rogers, Professor of Botany in Lawrence University. The first edition was a true labor of love, a tremendously expensive labor from all aspects, representing intensive preparation and management and heavy financing by the author. So this issue in paperback form — the Dover paperbacks are constructed superbly and designed for years of use — makes the book available to an extent that could only be dreamed of at the time

of initial publication.

This is indeed an exciting and delightful work, not because it presents tree flowers per se and contradicts the widely prevalent idea that trees are plants that do not produce flowers. We in California have always been conscious of the beauty of tree flowers and have given them prominence in our nature lore activities, our decor and our flower arrangements; the eucalyptus blooms in their various forms and colors, magnolia, grevillea, jacaranda, acacia, Cape chestnut, shower tree, fruit bearing trees, dogwood, redbud, tulip tree and numerous others. Yet it is true that few outside the ranks of naturalists are familiar with the many minute delicate tree flowers,—those that must be studied with the aid of a lens.

No, it is not in the presentation of the flowers, wherein lies the charm of Walter Rogers' work; it is the plates, the silhouettes, the marginal drawings. With the idea of representing the small flowers on a scale large enough to make their size comparable with more commonly known flowers, he devised a special technique by means of which such objects could be photographed six to twelve times their natural dimensions; then in the process of making a half-tone, this image thus obtained was still further enlarged so that the final magnification of the object is in some cases 20 to 30 times the original size. Thus features almost indistinguishable to the unaided eye could be brought to the point of easy visibility. In most cases the natural size of the subject is indicated by a drawing at the top of the title page which accompanies the plate and the extent of the magnification is obvious.

There is a general lack of appreciation of trees in their leafless winter condition. Bear in mind that the author deals mostly with trees of northern and eastern United States. The outline of the whole plant, the anatomical pattern is properly a matter for winter observation. It was with the idea of attempting to stimulate interest in the winter aspects and architecture of the trees that the silhouettes were drawn. Small drawings, placed above the plate on the text pages show the natural size of the flowers;

additional marginal drawings present interesting and distinctive features.

No attempt has been made to write technical descriptions of the flowers, as the book is intended to be chiefly pictorial. Text matter is included for the purpose of explaining certain features of the plates or of presenting certain relevant and accessory facts of interest about the flowers. Therefore, there is little new in the text, which, happily, the layman finds easy to read; restful, at the same time, stimulating!

The book clearly fulfills its avowed double purpose; the calling attention to the existence of tree flowers and the portrayal of some of their variations, and, second, the stimulation of interest in the winter characteristics of trees. Because of this, Rogers brings to the readers a genuine enjoyment, an appreciation of beauty in Nature and of the art of photography.

Truly a book with universal appeal that everyone would delight in. A MUST for your library and for your times of relaxation.

Food and Flowers For Informal Entertaining; Marjorie Fisher and Patricia Wisniewski; Hearthside Press; 1965; 191 pages; \$4.95.

THIS is really a cook book for busy people; not a flower arrangement book, but it has a strong appeal to flower arrangers, because it presents sections that tell how to color-correlate food, table appointments and flower arrangements. The text is unpretentious; it tells how to entertain small groups informally and simply, yet with beauty and style. Well illustrated and indexed.

CALENDARS FOR GARDENERS

HOME AND GARDEN CALENDAR FOR 1966; standard size; Hearthside Press; \$1.50.

HOME AND GARDEN CALENDAR FOR 1966; small size; Hearthside Press; \$1.00.

AFRICAN VIOLET CALENDAR FOR 1966; standard size; Hearthside Press; \$1.50.

For every week of the year an illustration, some in color, of a prize-winning plant or arrangement, and a three-divided page with blank spaces for notations.

CAN THERE BE GRASS?

by Janet Richards

What can you do to help in the effort now being made to establish a landscaped park on Harbor Drive?

Take an envelope.

Address it: The San Diego Unified Port District, Attention: Mr. Miles Bowler, Chairman, 3165 Pacific Highway, San Diego, California.

Place a short note within the envelope stating that you are FOR a landscaped park along Harbor Drive.

Sign it. Mail it. Thank you.

Garden clubs wishing to take group action may use the following resolution: "(Name of Group) urges the development of a landscaped park of that portion of Harbor Drive from the bridge at the Naval Training Center to the Lockheed Marine Laboratory, from the roadway to water's edge."

The area under consideration comprises 7 acres. Three of them (easterly) are under the San Diego Unified Port District. Four of them are under Navy jurisdiction. RAdm. Walter H. Price, Commandant of the 11th Naval District, in a letter to Congressman Bob Wilson, has stated his willingness to discuss landscaping the waterfront strip.

The problem which confronts the Port Authority is the cost of establishing and maintaining such a park, as opposed to the revenue which would be derived from commercial leases for marinas. The Port Authority has estimated that it would cost \$245,000 to lay out a park, and \$45,000 annually to maintain it.

From city sources, we have learned that the cost of developing 7 acres for a park would be \$150,000 to \$200,000 and \$18,000 annually to maintain. These figures would allow a highly developed park including landscaping, walks, parking, curbs, guttering, rest rooms, drinking fountains, and park benches.

Immediately across the proposed site of this park on Harbor Drive, construction has begun on the \$5,000,000 Air Terminal. There will be asphalt for 4,000 cars.

Grass, anyone?

(For further information: Mrs. Frank Evenson, 222-7280.)

Fourth in a Series
on the Native Cacti
of San Diego County

ECHINOCEREUS

by R. Mitchel Beauchamp

THE most beautiful flower of our native cacti is that of the Hedgehog Cactus. The flower, which appears during the late spring, is magenta or purplish-red in color, but variations from this color are quite extensive.

The strange name of this cactus, Hedgehog, is derived from its scientific name *Echinocereus*. The prefix "Echino" is Greek for Hedgehog and refers to the spine-covered fruit.

The Hedgehog Cactus of San Diego County is botanically known as *Echinocereus engelmannii*. This cactus forms a clump of ten to eighty ascending stems of about one foot in length and two to three inches in diameter. The plant body is very spiny but the spines, like those of most of the members of the tribe Cereaceae, are not barbed. There are two types of spines on *E. engelmannii*. The principal spines are up to three inches long and thicker than the accompanying secondary spines. The spine color of this species has been the point of controversy for many of the early cactus taxonomists.

Because of the tremendous range of spine colors, which include white, yellow, orange, red and black, certain names have been placed beside certain colors. Names for these variations include *albispinus*, *fulvispinus*, *pfersdorffii*, *robustus*, *versicolor* and *chrysocentrus*. An *E. engelmannii* found in Arizona and Sonora has been closely associated with the last name of this list, *chrysocentrus*, because of its more slender and lighter-colored spines. Britton and Rose, in their monologue, believe that this variation may, upon further study, prove to be of species status.

The fruit of *E. engelmannii* is like an oblong sphere about one-half inch



Photo by the author

Specimen Hedgehog Cactus growing in the botanical garden of Palomar College.

in radius covered with an ample number of protective spines. The function of the spines appears to be that of protecting the fruit during its period of maturation, for when the fruit is ripe the spines are shed, leaving the edible morsel available for easy consumption by any desert wildlife. The red color and edibility of the fruit have caused the name of Strawberry Cactus to be given to this native cactus and its Arizona neighbor, *E. fendleri*.

E. engelmannii has a desert habitat and has a large range which extends from Utah southward to Sonora and Baja California. In our county it is found from Jacumba, northward to the Narrows on State Highway 74. The type locality is given by Dr. Parry in 1852 as, "Mountains about San Felipe, on the eastern declivity of the Cordilleras." The San Felipe referred to is what used to be a small settlement in San Felipe Valley located about nine miles northwest of Scissors Crossing.

Accessible areas for observing *E. engelmannii* are located at the following sites. The area behind the San Diego and Arizona Eastern Railway station at Jacumba is very abundant with plants which include a large range in spine coloration. This area is of a volcanic nature and a relatively small number of plants grow along with *E. engelmannii* in the scoriaceous soil. At Mountain Springs there are a few very large clumps about three feet or more in diameter. In many places along the route of Imperial Highway and the desert section of State Highway 74 as they pass through Anza-Borrego State Park the Hedgehog Cactus grows profusely. Thankfully, *E. engelmannii* can still be seen at its type-locality, San Felipe.

Calendar of Care

Down-to-Earth Gardening for December & January

by Ed Ogden



THE holiday season is especially significant to gardeners as to all nature lovers, with its symbols of creation, birth, giving and receiving, even to the ancient tree-worshippers and their gift of the Christmas Tree. Gardeners and plant lovers are intimately involved in the cycle of birth, creation of beauty, renewal of life, and the satisfaction of working in partnership with Mother Nature.

And the results of our joint efforts are everywhere to see at this time: the traditional Christmas poinsettia is splashed across the landscape (and the annual pilgrimage to North San Diego County's poinsettia fields is under way, with a tip of the hat to Paul Ecke). Earlier camellia and azalea varieties are in bloom; cyclamen, callas, clivias and winter begonia varieties are in their prime; colorful berries of hollies, cotoneaster, nandina, pyracantha and toyon provide cutting material for the house as well as accents in the garden; birds-of-paradise are supplying their tropical note to the winter color scene; and many of our showiest flowering shrubs are celebrating along with us. First plantings of stock, snapdragons, calendulas, Iceland poppies and the like are in full bloom and calling attention to the need for second plantings if not already in the ground.

The earliest bulbs will be coming into bloom, and practically all of the so-called "Fall bulbs" may still be successfully planted through this period with assurance of flower production. Hybrid amaryllis and lilies should go in now, with special attention called to the Jan de Graaf hybrids with their distinctive color tones and combina-

tions and heavy flower production. As always, bonemeal is invariably required in planting, and don't forget to topdress and work in additional bonemeal for bulbs which have naturalized.

The Christmas gift list is much less of a problem to gardeners than to most. Even for apartment-dwellers on our lists there are miniature tensiometers to measure moisture levels in potted plants, rain gauges, outdoor thermometer/humidity gauges, barometers, bird feeders to mount outside a window, and many others. Selections for active gardeners is much broader: in addition to old favorites such as potted plants, pruning shears and gift certificates there are power equipment and other labor-saving devices, pines and hollies fully decorated with ornaments and little gift items, attractively packaged bulbs and bare-root roses, fountains, garden statuary, terrariums, 12-volt garden lighting kits, and soil testing kits.

Christmas pot plants give double enjoyment in our areas in that they can make the transition from coffee table to the landscape, with proper treatment. Cyclamen and azaleas should be kept indoors the shortest period possible due to their need for cool, humid air. Potted azaleas become extremely root-bound during the forcing process and should be planted out by soaking the rootball, spreading the roots by working apart with the fingers, planting in pre-moistened peatmoss or a peat and fir-bark mixture, and watering in with Hormex or other transplanting solution. Poinsettias need daily watering during their prime, but then should be set outside in the shade and water grad-

ually reduced until they are hardened off for their dormant period around March first for planting out. Potted chrysanthemums are made up of four or five rooted cuttings only a few months old, so instead of cutting back all the way as one would do with garden plants cut just the blossoms off, leaving foliage, until new offsets appear at soil level. Christmas cactus enjoys more water during its winter blossoming period but then should go out in a shady spot where watering intervals can be lengthened. And flowering cattleya-type orchid plants must be supplied with humidity in their immediate area, and are most susceptible to overwatering—probably once a week in most situations.

Living Christmas trees are becoming increasingly popular, both in their own right and as an economy. As with most new approaches there are as many pitfalls as rewards—many pines that flourish in the mountains refuse to live and grow at sea level or with irrigation from Colorado River water. Of thousands of spruce trees imported every Christmas very few are known to live and thrive in most of our areas. The giant Sequoia is notorious for growing happily in coastal areas for a period of two to six years and then expiring painfully; and fir, hemlock and other northern conifers turn up their heels almost immediately. So caution, and reliance on reputable dealers, are the guidelines to follow in selecting a living Christmas tree and also in selecting the right spot to plant it out after the holidays.

With few exceptions gardening chores at this season are limited to

feeding and irrigation. Winter feeding of tropicals can be contradictory: if you are in a frost pocket, don't feed—tender new growth is most susceptible to damage; but if in a frost-free zone feed more heavily than normal to compensate for an inefficient root system. In both types of climate winter irrigation of tropicals is specific—keep the plants as dry as possible in order to keep soil temperature high. Dormant deciduous plants still require irrigation and fertilizer even though leafless. And one more word of caution: several rains are required to moisten our subsoils to the point that we can slack off on deep irrigation of deep-rooted shrubs and trees. These chores, normal planting of container-grown stock and seasonal annuals, planting and care of dormant stock, comprise the bulk of garden work. In addition, check blooming poinsettias for mites; apply pre-emergence crabgrass killer to lawns, concentrate on control of snails and slugs. Appraise the entire landscape for soil erosion or drainage problems requiring some garden engineering, and maybe start your annual clean-up program early this year.

January is bare root planting time, the traditional harbinger of spring for the gardener. Most of the new rose varieties prove satisfactory in these regions, products of thorough testing programs before commercial production is started. New varieties in fruit trees may become valuable additions in the orchard, but occasionally we find them to be poor performers in our areas. The relatively-new dwarf strains can be most useful in saving space along with heavy production for their size. Selection of varieties to be planted is critical, since many new and old favorites from other climes have not done well in Southern California. Some examples: only about a half-dozen apple varieties and just one cherry (the English Morello sour pie cherry) do well in the mild winter areas. Pears may skip one or more seasons without significant production. Those who want a white fig are wise to choose the White Genoa, as the Kadota and other whites may need fertilization by the Capri moth. In the small fruits, many standard varieties from the North are poor producers even in our cool coastal areas. And in the coastal areas over half the grape varieties are failures, with good success usually reported only from Perlette, Cardinal, and the Concord arbor grape. These examples point to the need for dependable advice from an old-time gardener in the

neighborhood or from a reliable nurseryman.

For all bare-root planting, extra-good soil preparation is the key to success. Manure should be used only if the planting hole is prepared at least a month or six weeks in advance. Low-test digested sewage sludge is probably the best of amendments, supplemented with composted redwood sawdust for plants which like more acid soil and in adobe areas. Bonemeal is also much recommended for all fruiting or flowering plants. One item which probably explains most mortality in bare-root planting: free moisture must be available to the roots until extensive new root development has taken place—even if moist soil is revealed in digging around a newly planted tree, there may not be enough free moisture to keep the roots from shriveling. So faithful watering at intervals of from one to three days depending on soil and weather is mandatory for good success.

Pruning and dormant spraying of deciduous plants is a normal garden job during this period and by far the most important maintenance task of the year. Follow the Rose Society's recommendations on this job; we would add only that the borer is becoming an increasing problem and all pruning cuts should be sealed. Our fruit trees vary widely in their pruning requirements: peaches bear on new wood, whereas apples and cherries bear on spurs from old wood, with other varieties between these two extremes—so a pruning manual is a necessity. Dormant spraying is not a simple job—some common dormant sprays damage certain types, some trees require more than one spraying, and the timing of the application is often critical.

Happy Holidays!



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Fuchsias

by Morrison W. Doty

San Diego Fuchsia Society

EVEN in this land of year-round gardening, winter brings quite a decrease in activity outside, which gives us a good time for taking stock and planning. While all of us enjoy pretty plants, only the thoughtfully planned garden can best express our own individuality. The enjoyment of growing things is a happiness hobby.

The Fuchsia fancier who has recently been beguiled by a few brilliantly colored baskets, should find this a good time to study types (bush, basket or trailing, erect or espalier) and varieties for each in order to select those best adapted in color and hardness to heat or cold, to his own location and garden plan. Most Fuchsia nurserymen are very glad to help with your climatic and situation problems.

Tests for heat and cold hardness in England and this country have seemed to favor plants with much aboriginal purple in their parentage, such as the old *Rose of Castile* for both extremes, while *Glendale* and several other newer varieties will stand direct sunshine. Our excessive heat in October this year has caused many plants to defoliate, and some container plants to be lost, if they were not well watered and cared for. If allowed to go on into dormancy, after discreet pruning and watering, nearly all of these desolate looking plants will come back in the springtime.

If your garden is in a cold exposed place or low area, Fuchsias in the ground should be mulched now (also a good protection against excessive drying heat). Basket or container plants should be moved to warmer protected places and watched in winter for drying out on warm days if there is wind. The water and feeding is reduced, to induce dormancy and

though the soil may be dry on top, you must maintain moisture beneath constantly.

A charming feature of Fuchsias in this area is that some may be kept blooming all winter. Young and vigorous plants of certain varieties may be fed and watered as usual, thus inducing them to bloom on and on. The almost everblooming old *Gartenmeister Bonstedt*, and our *Pink Fairy* in San Diego have proven this. Here in the much moister climate of our house in the redwoods by the Golden Gate, baskets of *Dusky Rose* and *Lytic*, now blooming heavily, usually go on into January.

Naturally some of the most famous hybridizers, and their outstanding Fuchsia creations have come from this rain-forest atmosphere of San Francisco Bay. The well-known Waltz Gardens have produced even more startling new varieties than Gus Neiderholzer, the hobbyist, whom they followed as hybridizers and wholesale nurserymen. Miss Muriel Waltz and her mother did all the hybridizing of dozens of new varieties, beautiful beyond anything we had before, which over the past ten or twelve years have added a permanent heritage. The names, all so aptly chosen by Mrs. Waltz herself, include *Red Jacket*, *Dusky Rose*, *Waltz*, *White Fairy*, *Indian Maid*, *Waltz-time*, *Red Shadows*, *Shy Lady*, *Bluetie*, *Candlelite*, *Whirlaway*; some patented or copyrighted;—all outstanding. But the demanding science of hybridizing involves careful detail involving interminable records, plus all the work of a nursery, too much even as a labor of love. We were saddened to hear that Mrs. Waltz finished her work here forever, a few weeks ago. The nursery goes on still among the gorgeous old trees there in Ross, but Muriel Waltz is not hybridizing for the coming year. She is very proud of this year's lovely introductions: *Happy Fellow*, a bright orange mass of color; *Pink Chiffon*, a light pink basket trailer; and *Firelight*, a rich red with white sepals. Look for these new beauties—you will like them too.

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Irises

by James E. Watkins

President, San Diego-Imperial
Counties Iris Society

PROBABLY the most frequently asked question about growing irises is, "When do you cut the leaves back?" No wonder there is confusion about it, when at least two current general gardening magazines say, "Now is the time to cut iris leaves back." When advice like this is given by guides to gardening in reputable magazines, it is evident that many still think this is a necessary part of their culture. The opposite is much nearer the truth. Never cut the leaves back except for one of the following three reasons: (1) Cut them back when you divide clumps and transplant, to compensate for the loss of roots. (2) Cut back when they are badly infested with the fungus, "leaf spot," but cut as little as possible. It is better to keep leaf spot under control with a good fungicide. (3) And last, cut off dead leaves. You will probably continue reading about cutting the leaves back in various gardening columns, but you will never hear it from an iris specialist.

With few chores to do now in the iris garden except the usual watering and weeding, now is a good time to take a close scrutiny of each plant, cutting off any dead leaves. While you are doing this check to see that the rhizome is firmly covered with dirt. After the irises are planted and watered for a while, and when new shoots come out, there is often a settling of dirt away from the plant so that the central fan may have vacant space around it, an open invitation to sowbugs and other uninvited guests to crawl in and chew what they find there. This injury can then produce rot and before you know it, the leaves are on the ground and the rhizome is soft and mushy, the whole plant dead. Firm the soil again, perhaps first pouring into the hole some agricultural gypsum. At the same time you might cultivate the soil farther out from the plant with hoe or trowel. And you may want to check your labels.

The perfect label is yet to be invented. If you have but few plants or feel the names need not be referred to often, you will probably find quite adequate the thin aluminum labels

upon which you indent the name with a pencil or ball point pen. The one disadvantage of these labels is their tendency to fly away with the wind, so anchor them tightly. But if you have a garden visited by friends who want to know the name of each iris they see you will want something that can be read without stooping too low. Some make these from heavy wire and discarded venetian blinds, or they buy, not too cheaply, plastic labels with a wire holder.

The flexible type of plastic is much more durable. The big question remains of what to use to letter the plastic. The little machines that emboss a spool of tape seemed a perfect answer, making neat labels, quite easily read, easily affixed to the plastic, and removable when you discard a variety. I have found that in almost complete shade they will stay bright and clear for quite some time, but since irises prefer full sun and these labels fade badly in the sun, so they cannot be used for a year without becoming so indistinct as to need a close examination to make them out. Felt pens come both water soluble and waterfast, but of the latter I have tried five different brands and all fade quickly in the sun. Some have reported success with india ink, but it won't write on my particular plastic, though it may on some others. Probably the most permanent on the average is a plain medium lead pencil. I am also experimenting with two types of grease pen-

cils. The disadvantage for me, at least, with either of these is that it is more difficult for an amateur printer to produce a finished looking label.

Certainly you should mark each iris well, because as memory fades and you add more plants it becomes impossible to identify them otherwise. Personnel at an iris show or commercial growers are constantly besieged by pleas to identify an unknown iris, and this becomes more and more difficult, as varieties that are introduced are in many cases very similar to others. Last year there were over five hundred new varieties registered, and of the many thousands now on the market, a number resemble each other so closely that it is necessary to have a known flower at hand to compare before being sure in most cases.

One of the things an iris judge is told to do when seeing a new seedling is to decide whether this new possible introduction is better than or different from anything else on the market. If it is not, there is little use of its being introduced. But, alas, too many are! The best of them are decided improvements each year. The colors become clearer, the petals broader, the substance more durable, not to mention the ruffles, or lace, or contrasting colored beards that have appeared in recent years. Probably the first thing a gardener, (and most judges too) sees in an iris is its color, but other factors are equally important.

No matter how beautiful a flower is, it would be impractical to own it if it fades or crumples in half a day. Substance, then, is necessary if the flower is to last long enough to be worth-while. In our hot sun this is especially important, and there are irises on the market whose flowers hold up well in sun, wind, or rain for several days. Some varieties produce but few buds, others many, and certainly the more there are the better.

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The branching of a stem is important, too, so that each open flower may be seen separately, not all bunched together in a mass. Seen separately you will realize the importance of form also, whether tailored, frilled, ruffled, laced, or whatever. When the falls are narrow and hang down as if exhausted, or the standards are open and slump downwards, the color and any other good factors cease to mean anything.

Plan on examining your irises this next year with these thoughts in mind. Maybe some of them should be thrown in the compost heap, or maybe one of your old favorites still stands up well against modern competitors. Keep the good ones, throw the bad ones out. Better to have two clumps of one good variety than hang onto the second-rate. Or better yet, get some new varieties in the garden. Gardening is more exciting when you can look forward to something new in bloom.

Roses

by Carl Truby
President, San Diego Rose Society

WINTER CARE FOR ROSES

AS is so often the case, the weather makes many important decisions in gardening. Winter care of roses depends very much on the weather particularly in this area. How you and the weather team up to produce better roses will be evaluated at Show time in the Spring.

The first thing to watch for in late fall and early winter is consistent nighttime temperature below 55 degrees. Once this condition sets in it is time to help your bushes rest; not

sleep but rest. (Our roses rarely go completely dormant in the Pacific Southwest.)

First, with the knowledge that the bushes will never be completely dormant we realize we must continue to keep moisture in the root area so keep up your watering schedule unless it rains. The more hot warm days the more water required.

Stop your fertilizing program in late October and allow the blooms to remain on the plant until the petals fall and hips (seed pods) form. So doing will discourage further blooming thus allowing the bush to save and store energy.

If insects and diseases continue to be a problem spraying or dusting should be continued to keep control and maintain healthy plants. Regular growing-season amounts should be used and not the dormant strength.

Assuming we have an average winter and at least 40 nights of temperatures of 55 degrees or less then we can plan our dormant spray and clean-up programs.

The first dormant strength spraying should take place between Christmas and New Years Day. If properly done your bushes will be defoliated within a few days and you can start raking and burning the leaves. (They are good places for pests to hide.) Any foliage that doesn't fall off must be pulled off and disposed of.

About mid-January you should prune your bushes and give them the second dormant spraying immediately thereafter. (The San Diego Rose Society sponsors a pruning demonstration in Balboa Park about this time). From this point on your chores will consist of general rose garden practices. Water once each week if it doesn't rain, pinch off unwanted new growth such as multiple breaks and disbud where necessary. Spraying after new growth commences should be kept at a minimum until absolutely necessary. If all goes well you should have the perfect blooms to win prizes at the San Diego Rose Show on April 16th and 17th of 1966.



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Dablias

by Larry Sisk

San Diego County Dahlia Society

PROBABLY the greatest difference of opinion among dahlia growers is about storage of dahlia roots. Regardless of the opinion, the best advice to follow is keep on doing what you have done if you have been successful in keeping most of your roots from time of digging until time of planting in the spring.

The growers who would like to dig and store his roots, but who has been plagued with failures, might try one or all of these suggestions:

1—Quit trying and worrying and plan to obtain new stock at planting time.

2—Don't lift the roots after the plants die back, leave them in the ground and hope that nature will do the job; then, in the spring dig them, divide them and replant them, all in one operation.

3—Try one or more of the methods used by other growers, and perhaps hit on a system that will work.

The dedicated hobby grower who has satisfactory success in the system he is using might want to try something else, just for the fun and the experience. That's one of the things that make dahlias an exceptionally interesting hobby: There are new things to experiment with the year round.

Here are some of the methods that have worked for others:

1—Lift the root clumps with as much soil as will cling, turn the clumps upside down under a tree where they will be out of the sun and high enough not to lie in water or wet soil during rainy weather, and then carefully cover all the clumps with gunnysacks, or a tarp. The clumps should be protected from the wind to avoid excessive drying. In the spring, remove the covering, wash the soil from the clumps, divide and plant the roots that show their eyes or shoots.

Variations of this method include storing the soil-covered clumps in cardboard boxes or other containers and placing them in protected corners of the garage or a shed, and still keeping the soil on, storing them (always upside down) in a cellar or basement, or under the house. In all the

methods the clumps will need a covering to preserve the natural moisture and to prevent excessive drying.

2—Lift the clumps, split each through the center of the crown, wash off the soil, dry the divisions for two to six hours, and store in cardboard boxes or other containers — still upside down to permit crown drainage.

3—Lift, wash and divide the entire clumps for storage of the separated roots ready for immediate planting in the spring.

In the No. 2 and No. 3 methods a packing medium is recommended. For clumps that have merely been divided and which will be separated into individual roots in the spring, shredded or wadded paper might be sufficient. Or peat moss, vermiculite, shavings, straw, or even sand might be used; the idea is to keep off the drying wind and to keep in the natural moisture.

In No. 3, the greatest success has been achieved by storing the roots in layers, covered with vermiculite or peat moss, in cardboard boxes stored in a dry, cool place. Storage places that are exposed to unusual warmth should be avoided as the warmth will encourage premature sprouting.

Some growers who have had success in root storing believe that the secret is proper curing of the roots before storage. That means letting the plant grow to full maturity before being permitted to die back through permitting the clump to become dry (cure) naturally before digging.

In cold areas, frost takes care of the curing process. The clumps will be ready for lifting a week or so after a killing frost.

In sub-tropical Southern California, an artificial "frost" can be applied: Go around each plant with a spade, sinking the spade straight down, and circling about 12 to 15 inches from the stalk until a circle is cut in the soil to the depth of the spade. This cuts all the feeder roots and causes the plant to die back without harming the clump.

As soon as the plant turns brown or dies back, cut the stalk to within six to 10 inches of the ground, and let the clump "cure" for a couple of weeks or so. (Should there be rain heavy enough to soak the ground, the clumps should be lifted but permitted to lie there for a few days, weather permitting.) Then the clump is ready to lift, wash, divide, label with indelible pencil, dry and store in layers.

When a clump is divided immediately the eyes are plainly visible near the crown, making it easy to identify the roots worth saving. The eyes may disappear a few hours after digging, to reappear in the spring. In making the division of clumps, roots that obviously are without eyes, or that show signs of rot or disease should be discarded.

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(Continued from Page 16)

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East and Midwest

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Bromeliads

by Mrs. Cleovis Hardin

President, San Diego Bromeliad Society

WHAT are they? Where have they been and why haven't we seen more of them—questions that most everyone asks. First, Bromeliads are the most fascinating plants to come out of obscurity in a long time. Everyone is acquainted with the pineapple *Ananas comosus*, but few relate it to the exotic house plants now being re-introduced after becoming almost extinct during the World Wars in Europe.

Most of the hybridizers were located in the larger cities of France, Germany and England, and during the war, "farmed" out their stock plants to country-side homes. After peace came, the plants had to be gathered up again and many of the species were lost. Now after twenty years of hard work and patience, there has been enough seed developed from the good standard crosses that the growers and hybridizers of our country can carry on with their work.

We have several large wholesale houses, mostly growers themselves now, and more growers are becoming hybridizers. We have one of the most widely-known hybridizers in the world in Carlsbad, Mr. Ed Hummel, who has contributed many new and exciting plants, some almost unbelievable in their coloring. We also have a number of men collecting in the jungles of Peru, Brazil, Argentina and many South American and Central American countries. Many local men collect various species in our neighboring Mexico.

There is now a Bromeliad Society in San Diego, soon to affiliate with the parent society and the Floral Association. There is a very good book out by Wilson, *Bromeliads in Cultivation*—the first one in English that has many color plates and is written for the amateur as well as the more experienced grower.

There are so many bizarre combinations that one should try to see them in bloom if at all possible. Most everyone has seen the beautiful *Aechmea fasciata* which was recently put on sale at most nurseries and florists. After seeing that one it is almost impossible not to want more. The spectacular coloring of the *Neoregelias*—the *carolinae* being the most popular with its cushion of blue flowers against the brilliant red center leaves. Of course there is *N. marmorata* with its yellow-green leaves splashed with red and red fingernails, or *N. spectabilis*, a brilliant red with white bracts—all with blue cushions in the center.

For a most dramatic plant, look for *Vriesia splendens*, a dark green leaf with wide crossbars of brown and a tall spike of orange bracts with yellow flowers that stand 24 inches or more above the plant. A beautiful foliage plant seldom seen in bloom is *V. hieroglyphica* with green leaves that look artificial—they shine so—with brown blotches—a perfect vase-shaped plant.

Never overlook *Canistrum lindenii*, light green spotted with darker green and a beautiful clear rose center with orange flowers. Fantastic—but true.

Bromeliads are not difficult to grow. They enjoy much the same temperature as humans, about 50°-80°, with just a bit more humidity than we do. Of course, there is no hard and fast rule that can be made regarding watering. According to the humidity, potting media, air circulation, temperature and available light—one uses different amounts and times of watering. Those plants having a cup should not be allowed to become dry. Most other species, except the soft leaved *Vriesias*, *Guzmanias* and *Pitcairnias*, can become dry at the roots between waterings. Never use water from a water

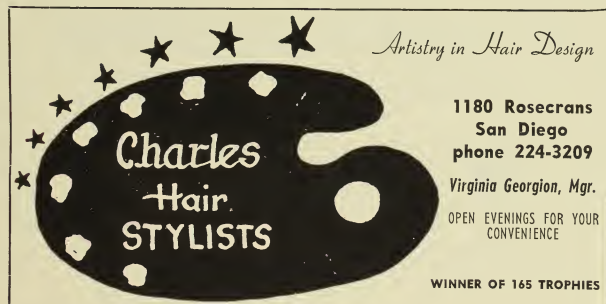
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softener. In the winter, water at room temperature can be used.

Bromeliads can survive with little or no fertilizer. However, any good soluble fertilizer or fish oil emulsion may be used during spring and summer months. The directions given on your choice of fertilizer should be used one-half strength filling the cups, as well as slightly wetting the potting mix. Be sure the plant has been watered well several times between fertilizing. Wash the cups out after about 24 hours either by flushing well with the hose or turning upside down.

Bromeliads are subject to scale and other insects. One tablespoon malathion to one gallon of water is recommended. Dip the entire plant. Drain the cup several times but allow a film of malathion to remain on the plant overnight. Next day rinse the cup thoroughly by flushing with clean water several times and refill with clean water. The scales remain on the plant even when dead, so carefully remove them.

Mealy bugs do infest Bromeliads and the same treatment as for scales is recommended.

Spider mites may attack the softer-leaved varieties. The spots may look like rusty, pitted areas especially on the underside of the leaves. Kelthane W at the rate of one tablespoon to one gallon of water or a mixture of Black Leaf 40, two tablespoons to one gallon and Red Arrow Garden Spray, one tablespoon to one gallon is recommended. Two repeat treatments at three day intervals should take care of the infestation. Diseases are almost non-existent. Never use oil base sprays or insecticides on bromeliads. Never use any copper, arsenic, zinc or lead or the salts of these materials.

The requirements for a potting mix for success with epiphytic types (tree-perchers) would be—enough substance to hold the plant erect, good aeration, good drainage and some moisture-

holding capacity. Potting materials can be river gravel, perlite (not vermiculite), coarse granite, fern fiber, fir bark, redwood bark or palm fiber. The pot size should be small, but large enough to hold the plant upright. Use bamboo or barbecue sticks to support the plant, but never use galvanized or copper wire. The leaves must always be above the potting medium. Either clay, ceramic or plastic pots will be suitable. A pot-clip can be made of a coat hanger, either plain or enameled.

The needs of the terrestrial bromeliads are only slightly different from the more robust growing epiphytes. The same potting mix can be used in most cases. The more xerophytic (dry-growing) sort, with hard leaves and upright tubular shapes (such as those found among the Aechmeas and Billbergias), and the fleshy-leaved types that do not hold water (such as Dykias, Hechtias, and Puyas), should be kept rather dry at the roots. These types can be potted in a rubble-type mix or coarse gravel, sharp sand and loam.

The saxicaulis (rock loving) species are much like the terrestrial type but certain types in their natural home grow on rocky slopes and have morning and evening mists to keep them moist. Many of the Pitcairnia and Cryptanthus fall into this classification.

Propagation of Bromeliads is relatively simple. For the most part when an offset is about two-thirds of the

size of the parent plant, it can be removed. Gently pull away until the area is clear to cut off the offset, or break completely if the stem is not too hard to break clean. Some of the *Vriesia* and *Tillandsia lindenii* have the kind of offsets that grow close into the heart of the plant. If extreme care is not used, damage to the parent plant can destroy it. Most varieties will pay over again for their purchase price in new plants.

Light requirements vary from plant to plant. Generally speaking the thin, shiny light green leaves will not tolerate any sun while the tougher green and spotted leaves can stand morning and afternoon sun lightly filtered. All of the green on the top and red, bronze or wine on the underneath side of the leaf can use the deepest of shade to bring out the foliage color. Then there are the dry-growing ones that can be planted in the rock or cactus garden. So one must observe where the grower from whom the plant was purchased had placed it. Never hesitate to ask questions until you are relatively certain how to care for your plant.

There are many shapes, sizes, colors and combinations in these exotic plants. They can soon become an obsession with you. They can be used to complement or contrast with other plants such as orchids, ferns and tropicals.

In no other family can you find a more versatile and breathtaking conversation piece than the Bromeliad.

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House Plants

by Raymond M. Hanna

IN Southern California we have an abundance of blooming plants to be used indoors. House plants include a wider range of material than is generally considered by most people. To discuss house plants fully would require a large book. All plants however have certain common requirements that should be stressed for the information of the casual, or even the serious grower of house plants. These requirements for care are usually relayed to the buyer by a competent nurseryman.

This article presents the basic requirements for successful growing of plants. Attention to these requirements rather than luck in the key to success. The successful "green-thumber" may instinctively be following these requirements.

Watering.

Rigid adherence to the requirements for water is probably the most important phase of successful plant growing. Foliage and blooms are constituted mainly of water, and any lack of supply either temporary or continuous will seriously harm most plants. Water is supplied to the plant through its roots, thereby making the control of the supply most important. Water is released through the leaves of the plant in varying amounts depending on conditions in the surrounding atmosphere. In effect the supply at the roots must be balanced with leaf transpiration.

In the supply of water the nature and amount of potting medium surrounding the roots is an important factor. A small plant with few roots, potted in a large pot could have a larger supply of water than would the

same plant growing in a small pot. Different types of potting soil or medium could also absorb or contain varying amounts of water. Most plants do well in a porous planting medium that retains water. It is a good rule to follow in potting or re-potting to use a pot somewhat larger than the rootball of the existing plant. Note, however, that in a few cases, some plants prefer to be contained in a small pot while others will thrive in a larger one.

How much water to apply each time can be determined by the pot size. Generally about 7 ounces for a 4-inch pot and 11 ounces for a 6-inch pot. This rule applies only if you are following a regular watering schedule and are allowing the plant to evaporate or lose nearly all of the pot's water supply. Where plants are known to require dryer soils, reduce the water.

The other factor of water supply is the amount of moisture in the air surrounding the plant. This governs the rate at which moisture is lost or transpired from the plant. If the atmosphere is dry, the frequency of watering needs to be increased. The amount of water used can remain the same.

Atmospheric conditions affecting the plant are relative humidity (the amount of moisture in the air) and temperature. With a higher temperature, in a dry room, the loss of water is greater than with lower temperatures. In the summer, when windows and doors are open, the atmosphere is nearly like that outside and generally is moist except in known dry regions. During the winter, the air is drier indoors.

The schedule for watering can be determined by experience. At the start, you should observe the appearance of the soil to determine its moisture condition. If the soil is dry, or has a light color, chances are that water is required. Remember, however, that you still use the same amount of water each time it is applied, and that you are only changing the frequency.

Light.

Other important factors in maintaining healthy plant growth are light and the addition of plant nutrients. All plants require light for proper growth but some will maintain themselves with a minimum of light. Generally, blooming plants require more light than foliage plants. Some plants will not bloom with inadequate light.

Very few foliage plants can tolerate direct sunlight and some such as *Diefenbachia amoena* prefer minimum lighting. Ficus and ivies prefer light of high intensity. Ferns, philoden-



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drons and bromeliads grow nicely with average to minimum lighting conditions. Where light in a house is inadequate, some plants cannot be grown. The effect of too little light is indicated by the condition of the leaves. When plants are spindly and new leaves are smaller than usual or if the lower leaves die, then a change should be made in the location of the plant; or artificial lighting can be used.

Feeding.

Feeding of house plants is one of the requirements most neglected. Nutrients should be applied regularly but not in heavy amounts. Generally, plant food should be applied to container grown plants at half the strength recommended for plants in the ground. Some manufacturers of plant food give exact instructions for the use of their product for house plants. Be sure to read all of their label. The choice of plant foods is important. Modern plant foods, especially those in liquid form, contain a chelating agent and trace elements of minerals needed for healthy plants. These are found usually in the higher priced product, although price is no criterion. Ask a competent nurseryman for a plant food suitable for your plant's growing conditions.

A good rule to follow is to use formulas higher in nitrogen for good green foliage color and one higher in phosphorus for good blooming results. The potash is required in either case and it is not wise to omit either nitrogen or phosphorus at any time.

In our own growing we have used successfully alternate feedings of whale or fish solubles and an orchid food with a 3-1-2 ratio. During a blooming period, we prefer a 2-10-10 formula. In explanation the first figure is for nitrogen, the second for phosphorus, and the third is for potash. Every product has its formula on its label somewhere. When transplanting we use a product called Start which contains vitamins, hormones and some phosphorus along with a chelating agent.

Last but of considerable importance in the growing of house plants is the need for periodic *leaching* of the soil to remove salts left by the water and plant foods. Leaching is accomplished by running extra amounts of water through the pot so as to wash away these salts down through the soil until they are below the plant roots. All excess water should be allowed to drain off and then plant nutrients applied to make up for those lost in leaching. The disadvantage of growing plants in containers without drainage can only be overcome by repotting.

Orchids

by Byron H. Geer

SO you don't know a Cymbidium bloom spike when you see one!!! Well, join the crowd. The best growers who see thousands of spikes each year get confounded from time to time, so it's not surprising that we who have a few plants in the back yard get lost. The spike hunt game separates the men from the boys all right, and it starts with the dyed-in-the-wool enthusiast about the first of October. Most of us rank amateurs are willing to hold off a month to know what to look for. Sometimes there can be no doubt, but just as often the differences are not readily apparent.

Generally there are some characteristics peculiar to a bloom spike, and if you know the signs, your correct guesses should average fairly high. Look for the fatter, thicker growths with the rounded, more blunt tip. If it does not show the separation at the tip into juvenile leaves the chances are good that it's a spike. And, if the growth-spike is coming out between the lower leaf of a green bulb and the bulb itself, you can almost make book that there's a flower in your future. For your own peace of mind I would suggest that you call everything that you are not absolutely sure of, a growth.

About a year ago I was called to the home of a budding Cymbidium grower in order to admire the seven spikes showing on one plant of the sixteen that he had. Reluctantly I had to tell him that he had seven beautiful new growths on the plant, but not one spike. Nor were there spikes on any of the other plants. He decided then and there that it wasn't worth the effort; if he was going to grow plants for foliage there are other things on which the foliage is more attractive. He is now doing an excellent job of growing Platycerium ferns, but it's too bad, for with a bit more patience and a mite more self-criticism he could be doing an excellent job of growing Cymbidiums.

All of which is a roundabout way of leading up to the point that if your Cymbidiums don't bloom, the fault is usually in the grower. Given food, water and sunlight in the proper proportions almost any plant will per-

form well. I say almost because there are some plants that are notoriously shy bloomers. This is a genetic inheritance, and no amount of Tender Loving Care is going to make them bloom every year. But still, if your plants are old enough and big enough to bloom and have consistently refused to produce, look first to your own growing conditions, starting with the potting mix where-in lies the trouble in nine cases out of ten. It has been proven that Cymbidiums will survive in almost any kinds of potting medium, but they will grow and bloom well only if they are in a light, friable, moisture-retentive, well-drained mix. Such a mix provides little or no food value, and supplementary feeding is a necessity. It will dry out rapidly and attention to a regular watering program will be essential too. Always moist, never soaking wet, is a set rule.

Assuming that your potting mix is good, your feeding and watering schedules are all that they should be and that your plants are getting all the light they can take without burning; they still refuse to spike up. What to do after two or three bloom seasons have gone by without satisfactory results? Run — don't walk, to the nearest available trash can and unceremoniously dump them. Life is too short to waste on the free-loaders. There are Cymbidiums that can be depended upon to flower every year, they are readily available and they are not expensive. You are growing Cymbidiums for the flowers and not for the foliage. There is no earthly reason why anyone should put up with recalcitrant plants.

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Pres: Mrs. Al. Sally 286-1973
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SAN DIEGO BROMELIAD SOCIETY

Second Monday, 7:30 p.m. Meets at home of
President
Pres: Mrs. Cleaves Hardin 469-3038
9295 Harness Rd., Spring Valley

SAN DIEGO GARDEN CLUB

Third Wednesday, Seacoast Savings Building,
Encinitas, 10 a.m.
Pres: Mrs. Wido Vogt 755-4772
773 Barbara Ave., Solana Beach

SANTA MARIA VALLEY GARDEN CLUB

Second Monday, Ramona Women's Club House,
5th and Main, 9:30 a.m.
Pres: Mrs. William Robinson 789-1987
Third & H Sts., Ramona 92085

SPRINGHOUSE GARDEN CLUB

Third Thursday, Porter Hall, Univ. & La Mesa,
7:30 p.m.
Pres: Mr. R. M. Frodahl 469-1933
3852 Avocado, La Mesa

SWEETWATER JUNIOR GARDEN CLUB

First Monday, 7:30 p.m. Meets at home of
Temporary President
Temp. Pres: Cleaves Hardin 469-3038
9195 Harness Rd., Spring Valley

VISTA GARDEN CLUB

First Friday, Vista Rec. Center, 1:00 p.m.
Pres: Mrs. W. L. Larsen 726-3622
320 Mar Vista Dr., Vista, 92083

VISTA MESA GARDEN CLUB

First Friday, Vista Rec. Center, 1:00 p.m.

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